



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

1.5+2
D212-664-201
Job Sheet 177548



Part No: D212-664-201

Job Qty: 1 ea

Part Name: Aft Crosstube - High



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 5/14/18

Job Tracking No:

Due Date: 5/31/18

Created By: Michelle Gagnon-Donovan

Type: Stock

Description:

Note: IIN-D212-664 REV.J/ D212-664-241 REV E IPP Rev:E 04.02.16 Reformat K/DS IPP Rev:F 06-03-29 Remove
Comments on Pick List JLM IPP Rev:G 07-04-30 As per Rev C JLM IPP Rev:H 08-05-22 up date Qty of rubber
cushion DD verf:EC IPP REV:I 14.05.27 AS PER ECN14-570 DD VERF:JLM

Ship Via:

Bill of Materials

3048820



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

Container No: S071906



Part: D212-664-201

Job No: 177548

Serial No/Batch: S071906

Revision: E/J

Inspector:

Date: 05/16/18

Job Routing								
Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier	
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time
90	Start up Operation	1 Ea	5/31/18	5/31/18	0.00	0.00	Start Up Crosstubes-1	
110	Packaging	1 pcs	5/31/18	5/31/18	0.00	0.00	Packaging1-3	
120	CNC Bend Crosstubes	1 pcs	5/31/18	5/31/18	0.00	4.44	CNC Bend Crosstube	
130	QC	1 pcs	5/31/18	5/31/18	0.00	0.00	QC15	
140	Crosstubes	1 pcs	5/31/18	5/31/18	0.00	4.99	Crosstubes-1	
150	HandFXtube	1 pcs	5/31/18	5/31/18	0.00	1.25	HandFinish5	
160	QC	1 pcs	5/31/18	5/31/18	0.00	0.00	QC7-1	
170	QC	1 pcs	5/31/18	5/31/18	0.00	0.00	QC5	
180	Outsource	1 pcs	5/31/18	5/31/18			SKY002-VC	5
190	Packaging	1 pcs	5/31/18	5/31/18	0.00	0.00	Packaging2	
200	QC	1 pcs	5/31/18	5/31/18	0.00	0.00	QC5	
210	SprayPaint	1 pcs	5/31/18	5/31/18	0.00	1.47	Spray Paint	
220	QC	1 pcs	5/31/18	5/31/18	0.00	0.00	QC14	
230	Crosstubes	1 pcs	5/31/18	5/31/18	0.00	1.47	Crosstube	
240	QC	1 pcs	5/31/18	5/31/18	0.00	0.00	QC5	
250	Packaging	1 pcs	5/31/18	5/31/18	0.00	0.00	Packaging1-3	
260	QC	1 pcs	5/31/18	5/31/18	0.00	0.00	QC4	
270	Packaging	1 pcs	5/31/18	5/31/18	0.00	0.00	Packaging3-1	
275	DC	1 pcs	5/31/18	5/31/18	0.00	0.00	DC	
280	QC21-FG	1 Ea	5/31/18	5/31/18	0.00	0.00	QC21	

Part Op 120 - ***VERF SET-UP BEFORE BENDING BY: _____

*** Bend tube as per Dwg D212-664-241 using

Descriptions: CNC bender program 212-aft

140 - 1-Drill pilot holes in tube as per Dwg D212-664-241 using drill Jig DT8550, DT8551, drill table DT8577 and locate tower holes #8 as per QSI0010. 2-Ream hole to finish size in tube as per Dwg D212-664-241 using drill Jig DT8550 & DT8551. Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes. 3-Scribe part # and batch # using vibrating stylus as per Dwg D212-664-241 4- ***WEAR LATEX GLOVES HANDLING CROSSTUBE.*** Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D212-664-241

150 - ***IMMEDIATELY AFTER GRINDING***

180 - ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.*** Issue P/O: 10076 LIQUID PENETRANT INSPECTION AS PER QSI 038 OR LPI AS PER ASTM 1417 LEVEL 2 JUN 04 2018

190 - ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.***

200 - ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.*** Inspect for damage & ensure results are as per Dwg D212-664-241

210 - *** WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE*** PRIMER 138647

PAINT 138863

220 - Then, Wrap in plastic bag to protect from scratches

230 - *****LAY DOWN CROSSTUBE ON TABLE AND PUT DT10302 PINS IN SADDLE HOLE FACING UP, USE HOLE IN TAPE MESURE TO PUT IN PINS FOR LOCATING CENTER OF CROSSTUBE. ***** 1- Abrade mating surfaces of support and crosstube with 180 grit sandpaper, clean the area with MEK or equivalent as per dwg 2- Install supports with Proseal 890 per D212-664-241 and QSI 015 A/R Proseal 890 Batch: 138784 EXP: 09/18

PROSEAL CURE TIME 72 HOURS: Start: 16/06/2018 Finish: 19/06/2018 3- Install clamps with rubber cushion (ENSURE CLAMPS ARE INSTALL ON TOP SIDE OF CROSSTUBE) using DT9565 as per Dwg D212-664-241. ***Torque all clamps to 80-100 IN-LBS.***

240 - ***RE-CHECK TORCQUE ON CLAMP AFTER PROSEAL HAS CURED FOR 72HOURS AS PER DWG.***

260 - ***VERIFY BY _____ BATCH # TO MATCH W/O _____

270 - Identify and pack for shipping as per PPP D212-664-201 Location : FG098

275 - Photocopy bluefile and create labels as per PPP D212-664-201 CHG006

Job BOM

Part / Item	Component Name	Quantity	Operation	Container
D212-664-201TRN	Crosstube Turning Detail	1 Ea (1 ea)	90-Start up Operation	
D2940-1	Support	2 Ea (2 ea)	230-Crosstubes	
D3595-063-530	Rubber Cushion 0.63" Wide X 5.30" Long	4 Ea (4 ea)	230-Crosstubes	
MS21920-28	Clamp	4 Ea (4 ea)	230-Crosstubes	
AN6-40A	3/8-24 Bolt X 3" Long	4 Ea (4 ea)	250-Packaging	
AN6-41A	Bolt	2 Ea (2 ea)	250-Packaging	
D3428-1	Placard	1 Ea (1 ea)	250-Packaging	
MS21042L6	Nut	6 Ea (6 ea)	250-Packaging	
NAS1149D0663J	Washer	18 Ea (18 ea)	250-Packaging	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	D212-664-201TRN	1	5	0
230-Crosstubes	D2940-1 <i>507-9508</i>	②	11	0
	D3595-063-530 <i>50610-586</i>	④	37	0
	MS21920-28 <i>5081001 (4)</i>	④	75	0
250-Packaging	AN6-40A <i>5032483</i>	④	127	0
	AN6-41A <i>506057-2</i>	④	77	0
	D3428-1	1	36	0
	MS21042L6	6	380	0
	NAS1149D0663J	18	1,111	0

Part Specifications

Specifications could not be found.

Plex 5/14/18 1:50 PM Dart.Gagnon.Michelle

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WITHOUT NOTICE
WORK ORDER

NO. 177548
MAY 14 2018

Item	Qty -241	Qty -241B	Part Number	Description
1	X		D212-664-241	CROSSTUBE ASSEMBLY (205/212 HIGH AFT)
2		X	D212-664-241B	CROSSTUBE ASSEMBLY (214 HIGH AFT)
3	1	1	D6006-129	CROSSTUBE
4	2		D2940-1	SUPPORT
5	4	4	D3595-063-530	RUBBER CUSHION
6		2	D5018-1	SUPPORT
7	4	4	MS21920-28	CLAMP (OR MS21920-30)
8	A/R	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6006-129
FINISHED LENGTH = 124.362±0.020
- 2) FINISH: a) CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
b) PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
c) MASK UNDERSIDE OF CROSSTUBE AS SHOWN (ZN C6-2 / C6-3, HATCHED AREA)
d) PAINT OUTSIDE PER DART QSI 005 4.2
e) REMOVE MASKING AND APPLY MATTE CLEAR COAT
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D212-664-XXX" AND BATCH NUMBER ON INSIDE OF CUFF USING VIBRATING STYLUS.
- 7) WEIGHT: D212-664-241/-241B = 44.2 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.

MACHINING

- 10) RUN CUTTER OFF PART. BLEND OUT EDGE LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.

BENDING

- 11) BEND PROGRESSIVELY WITH A MINIMUM OF 5 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 7.2% (BASED ON O.D.) IN LOWER HALF OF R35.5 BEND AND 6% (BASED ON O.D.) ON REMAINING TUBE.
- 12) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 036.

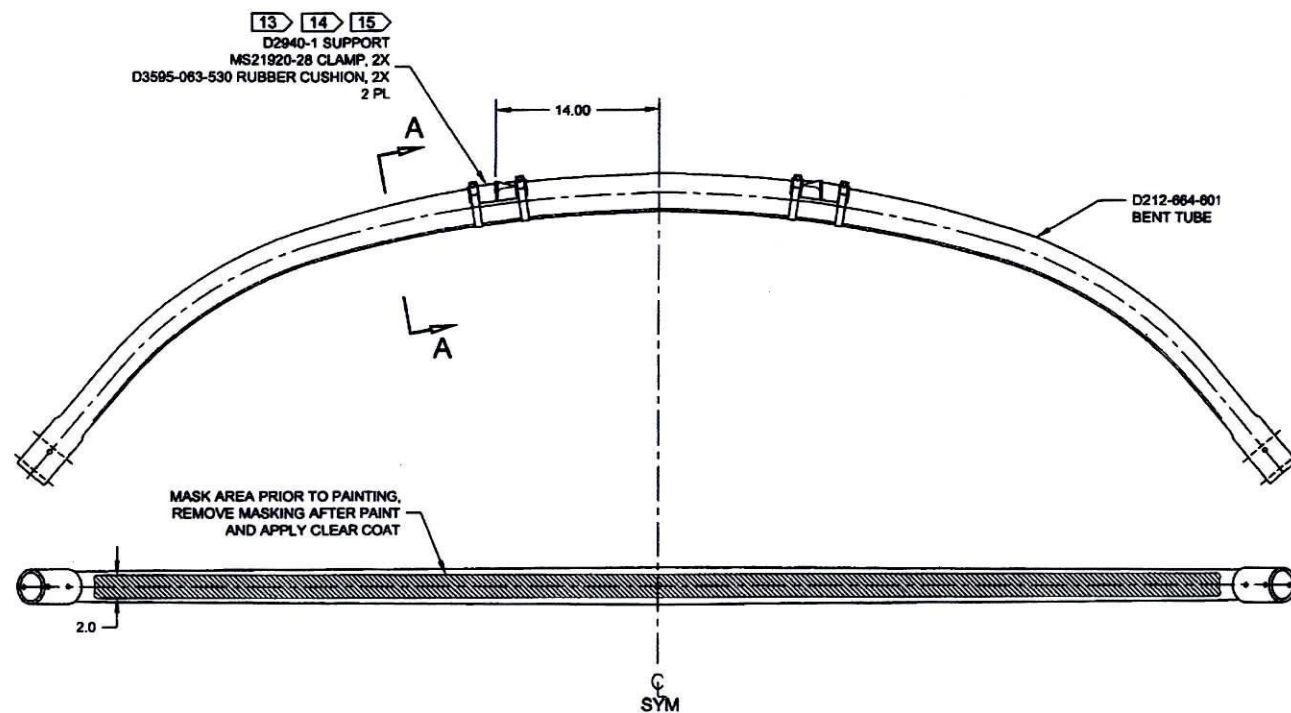
ASSEMBLY

- 13) INSTALL D2940-1 / D5018-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.04" TO 0.07" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- 14) INSTALL MS21920-28 CLAMPS (OR -30) WITH D3595-063-530 RUBBER CUSHIONS TO SECURE THE SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMPS ARE ON TOP SIDE OF CROSSTUBE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

RELEASED
2014-05-26

E	D5018-1 WAS D2940-1 (-241B), PROSEAL WAS MAGNOBOND, NOTE 2: ADD INSPECTION WINDOW, NOTE 11: ALLOW 7.2% CRUSH, NOTE 15: ADD 72HR CURE AND RETORQUE FOR PROSEAL, ADD SHEET 3, CLAMPS REVERSED TO PREVENT CHAFING (ZN B7-2, B7-3), BEND HEIGHT TOL. NOW 0.25 WAS 0.13 (C1-4), INCORP DEO D-1/-2	CP	14.04.01
D	REFORMAT/REVISE GENERAL NOTES/PART LIST; REORGANIZED VIEWS AND REFORMATTED DRAWING TO CURRENT STANDARDS; ADD -241B (ZN D4-2, B4-2); REMOVED REF & ADD TOLERANCES (ZN D8-3 & C4-3, C6-3 & A8-3); RELOCATED FLAG #6 PER PAR 06-048 (ZN A5-3); MOVED TURNING DETAIL & UPDATED TOLERANCE TO SHEET 4	RF	09.09.30
C	REMOVE -1009 ABRASION STRIP; ADD MAGNOBOND 6388, CUSHION, REVERSE CLAMPS	PH	07.03.08
B	ADD HOLES FOR COMPATABILITY WITH BHT/AA SKIDTUBES	PH	05.02.04
A	NEW ISSUE	CP	00.12.12
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	14.04.01		

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D212-664-241	REV. E SHEET 1 OF 5
TITLE CROSSTUBE ASS'Y (205/212 HI AFT)	SCALE NTS
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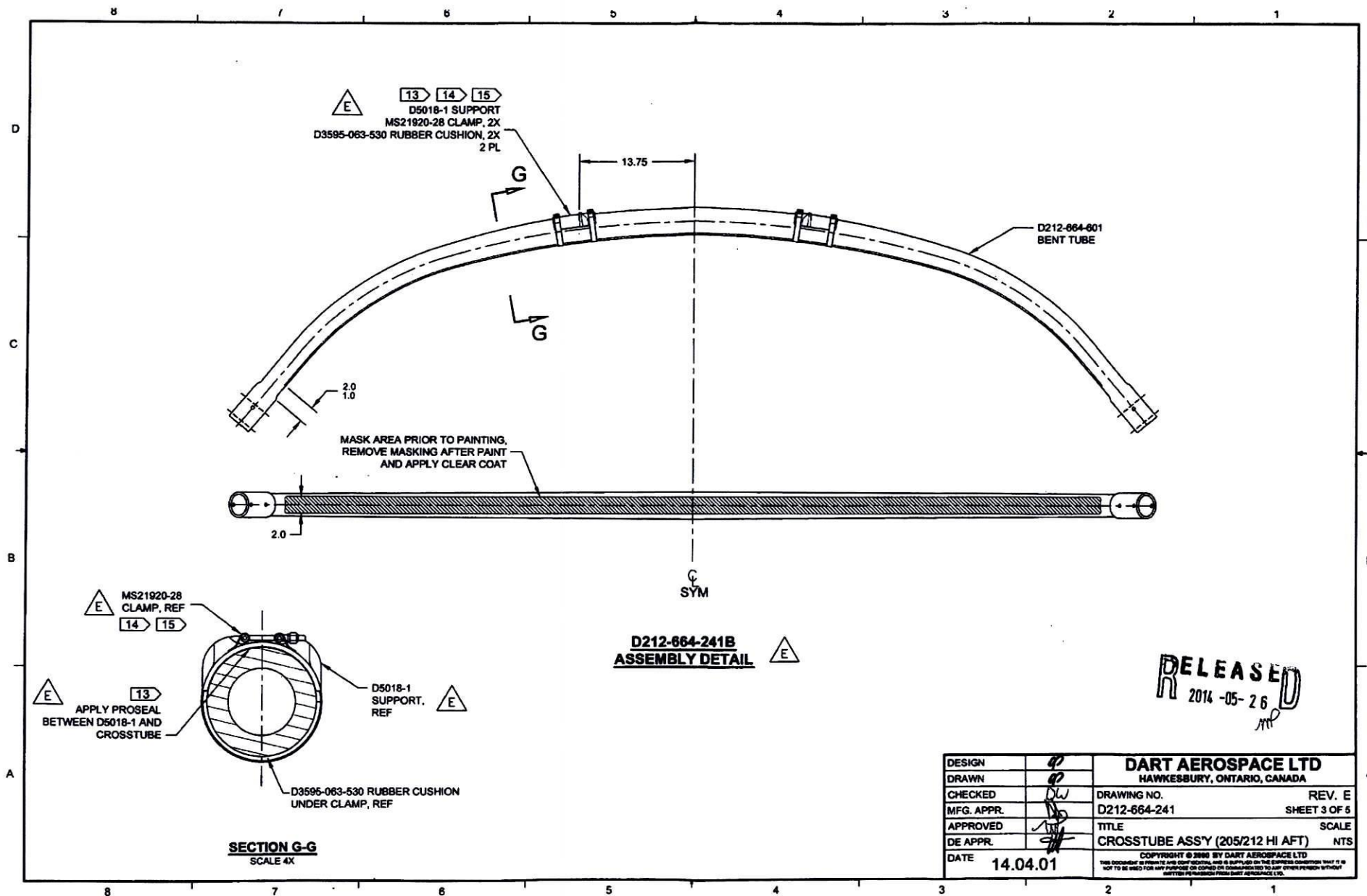


**D212-664-241
ASSEMBLY DETAIL**

**SECTION A-A
SCALE 4X**

RELEASED
2014-05-26

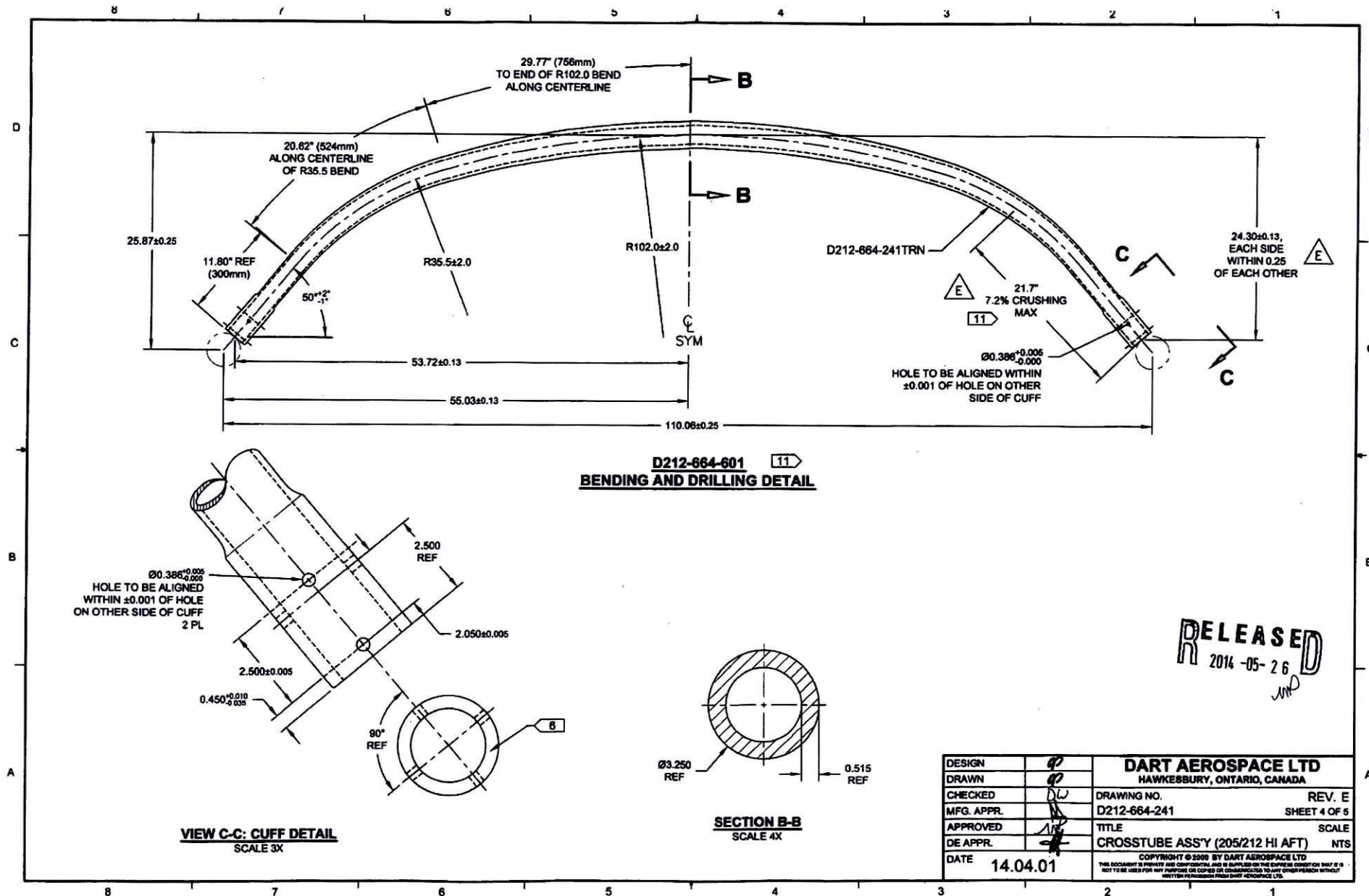
DESIGN	<i>Q</i>	DART AEROSPACE LTD	
DRAWN	<i>Q</i>	HAWKESBURY, ONTARIO, CANADA	
CHECKED	<i>Q</i>	DRAWING NO.	REV. E
MFG. APPR.	<i>Q</i>	D212-664-241	SHEET 2 OF 5
APPROVED	<i>Q</i>	TITLE	SCALE
DE APPR.	<i>Q</i>	CROSSTUBE ASS'Y (205/212 HI AFT)	NTS
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**D212-664-241B
ASSEMBLY DETAIL**

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2014-05-26

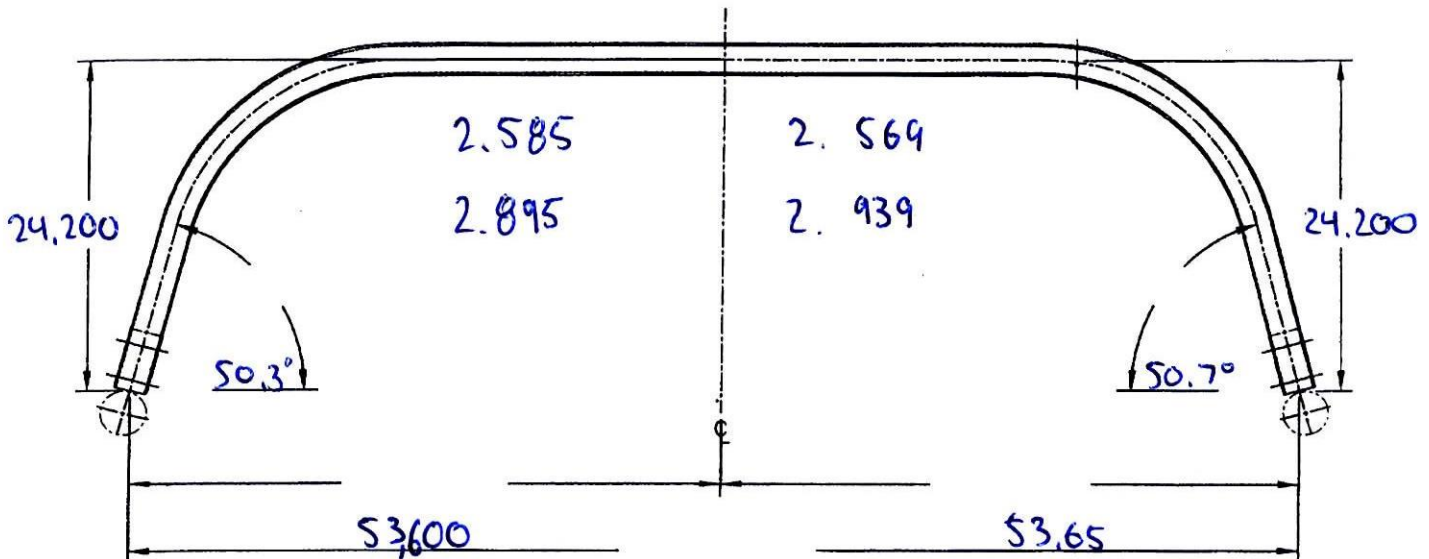
DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO. D212-664-241	REV. E
MFG. APPR.			SHEET 3 OF 5
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASSY (205/212 HI AFT)	NTS
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RELEASED
 2014-05-26
MD

DART AEROSPACE LTD		Work Order:	177548
Description: Crosstube High Aft (205/212)		Part Number:	D212-664-201
Inspection Dwg: D212-664-241 Rev: E		Page 1 of 1	

Required Dimension	Min	Max
Height	24.17	24.43
1/2 Span	53.59	53.85
Angle	49	52
Total Span	107.18	107.70
Bending Passes	5	--
Crushing	--	7.2%



	Side A	Side B
Bending Passes	20	21
Crushing	5.7%	6.7%
Comments		

QC15 Inspection	18-05-23
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	07.05.08	Dimensions updated per Dwg rev. C	KJ/JLM	
C	10.04.01	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing dimensions	KJ	
E	14.07.08	Crushing percentage revised	KJ	



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER PO040076

Supplier: SKY002-VC
Skyservice
6120 Midfield Road
Mississauga
ON
L5P 1B1 Canada
Phone: 905-678-5636
Fax: 905-678-5841

PO No: PO040076
PO Date: 6/1/18
Due Date: 6/4/18
**Purchase Order
Revision:**
Revision Date:
Ship-To Contact: Lavoie, Chantal
clavoie@dartaero.com

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pynt Terms: Net 30
Freight Terms:
Special Comments:

Items

Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price
1	177546	D212-664-201	Aft Crosstube - High ***WEAR LATEX GLOVES WHEN HANDLING CROSSTUBE.*** Issue P/O: LIQUID PENETRANT INSPECTION AS PER QSI 038 OR LPI AS PER ASTM 1417 LEVEL 2	Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	177547			Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	177545			Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
	177548			Firmed	6/4/18	1 pcs	0 pcs	1 pcs	\$208.75/pcs	\$208.75
Sub Total:						4	0	4		\$835.00

Grand Total: \$835.00

Order Notes

revd 6/18/2018

Procurement Quality Clauses
A005 right of entry
A012 chemical and physical test report
A016 personnel qualification
A017 raw material identification (as applicable)

A022 Apical Processing
A024 process certifications
A026 certification of material conformance

A041 quality management system
A042 dart notification by supplier
A043 retention of quality documents

A048 counterfeit parts avoidance, detection, mitigation and disposition program

A049 supplier awareness

Terms & Condition of Purchasing(Suppliers) and Procurement Quality Clauses are an integral part of our AS9100 requirements. To learn in detail, please visit www.dartaerospace.com for further explanation.

**skyservice****Work Order Traveler**
Sky Service F.B.O. Inc.

10105 Ryan Avenue, Dorval, Quebec, H9P 1A2

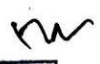
TCCA AMO 53-89 / EASA 145.7142 / BDA AMO 385

WO #: MWO36236	Customer: Dart Aerospace Ltd.	Dept: NDT YUL	Reference: PO040076
Descr:	PN:	S/N:	Qty: 1
Make:	Model:	Reg:	A/C S/N:
TSN:	CSN:	TSO:	
Task: UNSCHEDULED			Sequence: 1

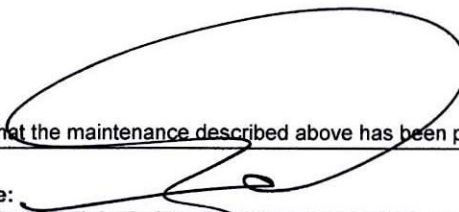
Work Required:

CARRY OUT NDT ON:

4 AFT CROSSTUBES , P/N# D212-664-201 , J/S# 177545 , 177546 , 177547 , 177548

Action Taken:						Date:	Initial/Stamp:
LPI C/O IAW ASTM E-1417M-16 ***NO CRACK FOUND*** PEN. ZL-56, MPO13600, CLEANER SKC-S MPO13923 , DEV. MPO11715 , UV LIGHT M-20142						JUN 01 2018	 
Description	Location	P/N	Qty	Batch	S/N Off	S/N On	

I certified that the maintenance described above has been performed in accordance with the applicable standard of airworthiness.

Signature: 	ACA/SCA Stamp 	Date: JUN 01 2018
Name: RAFIK MELIKIAN		



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

Container View (Active) - Master Unit Containers

Master Unit No	Container No	Part No	Part Name	From Container	Current Location	Quantity
004033	S083461	AN6-40A	3/8-24 Bolt X 3" Long	s041108	ST333	4
004033	S083460	AN6-41A	Bolt	s045844	ST333	2
004033	S083459	D3428-1	Placard	s046308	ST034	1
004033	S083458	MS21042L6	Nut	s041168	ST303	6
004033	S083457	NAS1149D0663J	Washer	s043782	ST263	18

Note: Ad hoc query view of Part.dbo.Container where Container.Active = 1.

Plex 6/23/18 8:05 AM dart.quirion.sonia